A-E30B

JVC

JVC -01533

SERVICE MANUAL

STEREO AMPLIFIER

MODEL A-E30B

Contents

Safety Precautions 1-1
1. Specifications 1-2
2. Service Precautions 1-2
3. Disassembling
  3-(1) Removal of the Top Cover 1-3
  3-(2) Removal of the Chassis Base 1-3
4. Block Diagram 1-4
5. Guidance to Repairing
  5-(1) IC 101 (M50761-304P) Pin Functions 1-5
  5-(2) Data Transmission Method 1-5
  5-(3) Signal Code List 1-5
  5-(4) Troubleshooting 1-6
6. A-E30B Schematic Diagram . . . . . Insertion
Parts List . . . . . Separate-volume Insertion

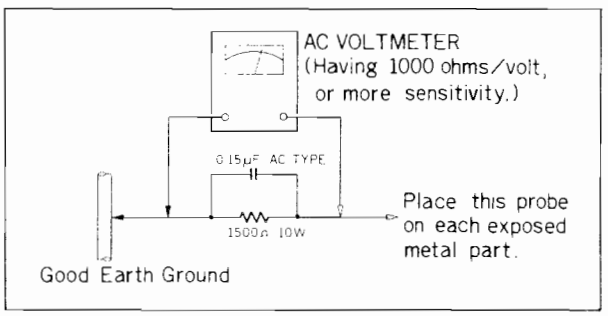
This manual combines two single volumes; Service manual and Parts list.

No. 2789
Nov. 1984

1533

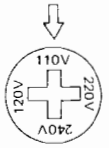
Safety Precautions

1. The design of this product contains special hardware, many circuits and components specially for safety purposes.
   For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the product should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the product have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the parts list of Service manual. Electrical components having such features are identified by shading on the schematics and by (⚠) on the parts list in Service manual. The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the parts list in Service manual may create shock, fire, or other hazards.
4. The leads in the products are routed and dressed with ties, clamps, tubings, barriers and/or the like to be separated from live parts, high temperature parts, moving parts and/or sharp edges for the prevention of electric shock and fire hazard.
   When service is required, the original lead routing and dress should be observed, and they should be confirmed to be returned to normal, after re-assembling.
5. Leakage current check
   (Safety for electrical shock hazard)
   After re-assembling the product, always perform an isolation check on the exposed metal parts of the Products (antenna terminals, knobs, metal cabinet, screw heads, headphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.
   Do not use a line isolation transformer during this check.
   - Plug the AC line cord directly into the AC outlet. Using a "Leakage Current Tester", measure the leakage current from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground. Any leakage current must not exceed 0.5 mA AC (r.m.s.).
   - Alternate check method
     Plug the AC line cord directly into the AC outlet. Use an AC voltmeter having 1,000 ohms per volt or more sensitivity in the following manner. Connect a 1500 ohms 10 W resistor paralleled by a 0.15 μF AC-type capacitor between an exposed metal part and a known good earth ground.
     Measure the AC voltage across the resistor with the AC voltmeter.
     Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.75 V AC (r.m.s.). This corresponds to 0.5 mA AC (r.m.s.).



CHECKING YOUR LINE VOLTAGE (For U.S. Military Market and Other Countries)
Before inserting the power plug, please check this setting to see that it corresponds with the line voltage in your area. If it doesn't, be sure to adjust the voltage selector switch to the proper setting before operating this equipment. The voltage selector switch is located underneath the bottom cover.

CAUTION: Before selecting the "Voltage selector switch" to proper voltage disconnect the power plug.



CORRECTION

1. Specifications

CIRCUITRY

Equalizer amplifier : MM equalizer amplifier
Power amplifier : Differential complimentary OCL amplifier

OVERALL CHARACTERISTICS

Output power : **27 watts per channel, min. RMS, both channels driven into 8 ohms from 40 Hz to 20 kHz, with no more than 0.9 % total harmonic distortion.**
30 watts per channel, min. RMS, both channels driven into 8 ohms at 1 kHz with no more than 0.7 % total harmonic distortion.

Total harmonic distortion : 0.09 % at 15 watts 1kHz, 8 ohms
Speaker impedance : 8 ohms – 16 ohms
Input terminals
Input sensitivity/impedance
PHONO : 2.5 mV/47 kohms
TUNER : 150 mV/47 kohms
CD/AUX : 250 mV/47 kohms
TAPE-1 : 200 mV/47 kohms
TAPE-2 : 150 mV/33 kohms

Frequency characteristic
TUNER : 20 Hz – 40 kHz $^{+1.0}_{-3.0}$ dB
CD/AUX : 20 Hz – 40 kHz $^{+1.0}_{-3.0}$ dB
TAPE-1 : 20 Hz – 40 kHz $^{+1.0}_{-3.0}$ dB
TAPE-2 : 20 Hz – 40 kHz $^{+1.0}_{-3.0}$ dB
Tone controls : TREBLE: ±8 dB (10 kHz)
BASS: ±8 dB (100 Hz)

GENERAL

Power source : See table below
Dimensions : 340(W) x 75(H) x 269(D) mm (13-7/16" x 3" x 10-5/8")
Weight (Net) : 3.6 kg (8.0 lbs)

Design and specifications subject to change without notice.

POWER SPECIFICATIONS

Areas	Line Voltage & Frequency	Power Consumption
U.S.A.	AC 120 V∿, 60 Hz	110 watts, 135 VA
Canada		
Continental Europe	AC 220 V∿, 50 Hz	80 watts
U.K.	AC 240 V∿, 50 Hz	80 watts
Australia		
Other areas	AC 110/120/220/240 V∿ selectable, 50/60 Hz	80 watts

2. Service Precautions

1. Before repairing, be sure to discharge the large electrolytic capacitors through a resistor of about 100 ohms/1 watt.
2. To check the P.C. Board, remove the chassis base and refer to "Disassembling" below.
3. When disassembling, be careful that the upper side (hairline surface) of the front panel is not scratched.

1. Specifications

CIRCUITRY

Equalizer amplifier : MM equalizer amplifier
Power amplifier : Differential complimentary OCL amplifier

OVERALL CHARACTERISTICS

Output power : **27 watts per channel, min. RMS, both channels driven into 8 ohms from 40 Hz to 20 kHz, with no more than 0.9 % total harmonic distortion. (U.S.A. and Canada only)**
30 watts per channel, min. RMS, both channels driven into 8 ohms at 1 kHz with no more than 0.7 % total harmonic distortion.
Total harmonic distortion : 0.09 % at rated output, from 40 Hz to 20 kHz, 8 ohms
Speaker impedance : 8 ohms – 16 ohms
Input terminals
Input sensitivity/impedance
PHONO : 2.5 mV/47 kohms
TUNER : 150 mV/47 kohms
CD/AUX : 250 mV/47 kohms
TAPE-1 : 200 mV/47 kohms
TAPE-2 : 150 mV/33 kohms

Frequency characteristic
TUNER : 20 Hz – 40 kHz $^{+1.0}_{-3.0}$ dB
CD/AUX : 20 Hz – 40 kHz $^{+1.0}_{-3.0}$ dB
TAPE-1 : 20 Hz – 40 kHz $^{+1.0}_{-3.0}$ dB
TAPE-2 : 20 Hz – 50 kHz $^{+1.0}_{-3.0}$ dB
Tone controls : TREBLE: ±8 dB (10 kHz)
BASS: ±8 dB (100 Hz)

GENERAL

Power source : See table below
Dimensions : 340(W) x 75(H) x 269(D) mm (13-3/8" x 2-7/8" x 10-5/8")
Weight (Net) : 3.4 kg (7.5 lbs)

Design and specifications subject to change without notice.

POWER SPECIFICATIONS

Areas	Line Voltage & Frequency	Power Consumption
U.S.A.	AC 120 V∿, 60 Hz	110 watts, 135 VA
Canada		
Continental Europe	AC 220 V∿, 50 Hz	80 watts
U.K.	AC 240 V∿, 50 Hz	80 watts
Australia		
Other areas	AC 110/120/220/240 V∿ selectable, 50/60 Hz	80 watts

2. Service Precautions

1. Before repairing, be sure to discharge the large electrolytic capacitors through a resistor of about 100 ohms/1 watt.
2. To check the P.C. Board, remove the chassis base and refer to "Disassembling" below.
3. When disassembling, be careful that the upper side (hairline surface) of the front panel is not scratched.

3. Disassembling

3-(1) Removal of the Top Cover

1. Stick the anti-scratch sheet on the upper side of the front panel as shown in Fig. 1.
2. Remove six screws, four on the both sides of the cover and two on the rear panel.
3. Lift up the rear side slightly and remove the top cover by releasing the locking of the front panel.

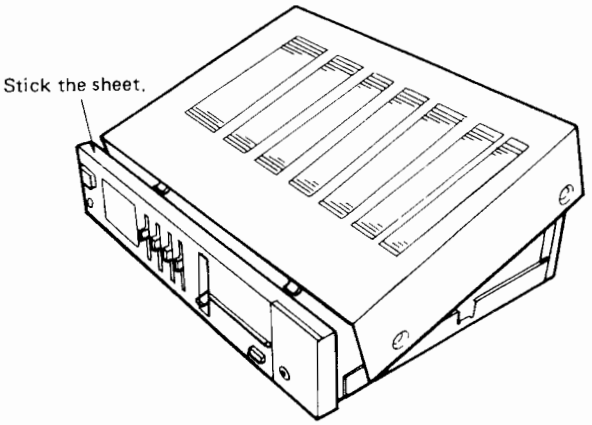


Fig. 1

3-(2) Removal of the chassis base

1. Remove the top cover.
2. Remove two fixing screws on the upper side of the power amplifier P.C.B.
3. Remove ten screws on the base (all screws except for foot screws) and two fixing screws of the front panel then open as shown in Fig. 2.

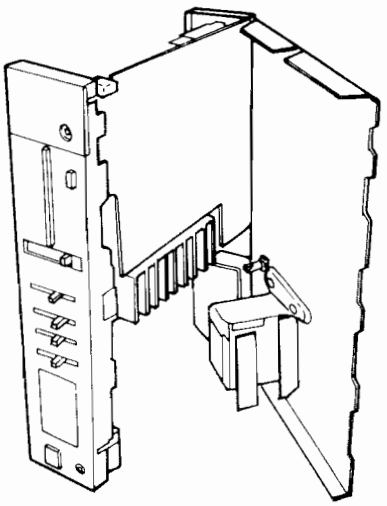
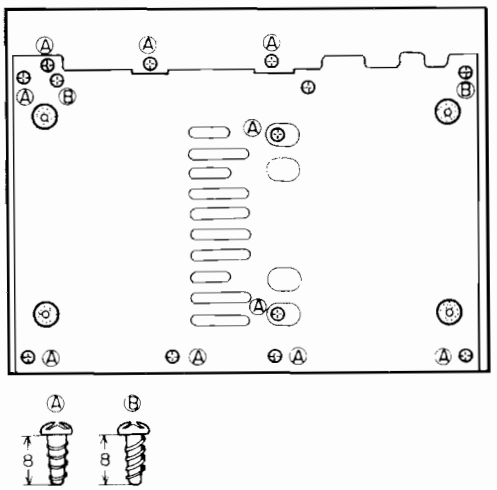


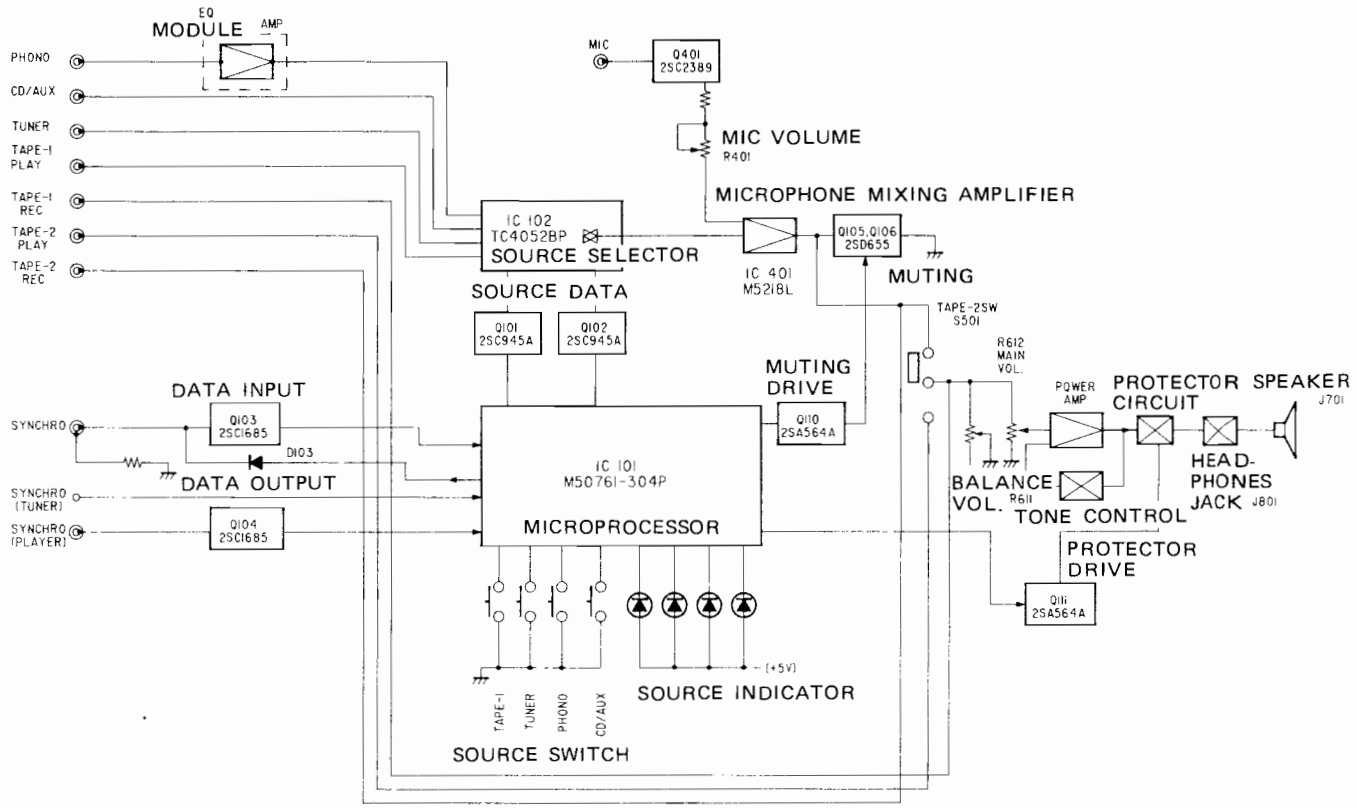
Fig. 2

Note:

- As two types of fixing screw are used for the base, make sure the screws are correct when reinstalling.

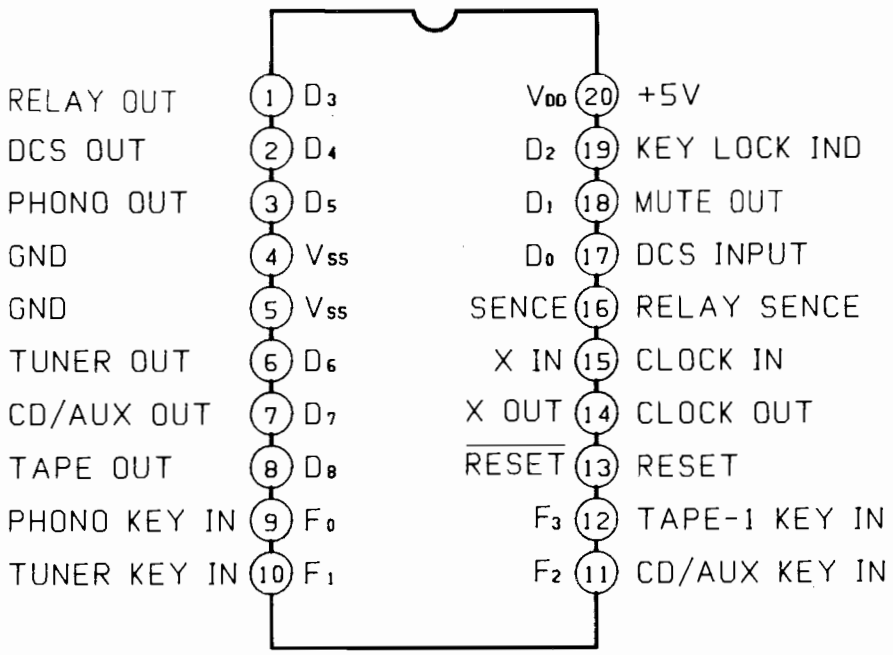


4. Block Diagram



5. Guidance to Repairing

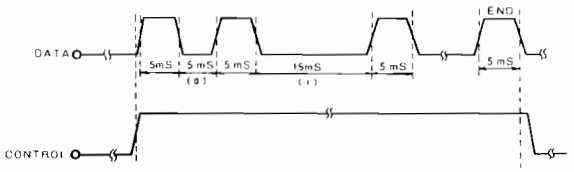
5-(1) IC 101 (M50761-304P) Pin Functions


RELAY OUT 1 D3
DCS OUT 2 D4
PHONO OUT 3 D5
GND 4 VSS
GND 5 VSS
TUNER OUT 6 D6
CD/AUX OUT 7 D7
TAPE OUT 8 D8
PHONO KEY IN 9 F0
TUNER KEY IN 10 F1
VDD 20 +5V
D2 19 KEY LOCK IND
D1 18 MUTE OUT
D0 17 DCS INPUT
SENCE 16 RELAY SENCE
X IN 15 CLOCK IN
X OUT 14 CLOCK OUT
RESET 13 RESET
F3 12 TAPE-1 KEY IN
F2 11 CD/AUX KEY IN

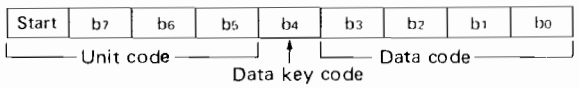
5-(2) Data Transmission Method

Two types of DCS are provided – one is the SYNCHRO TUNER terminal (2.5 mm dia.) exclusively for the TUNER and the SYNCHRO terminal (2.5 mm dia.) exclusively for the L-E20B; the other is the SYNCHRO terminal (3.5 mm dia.) for other equipment.
The SYNCHRO TUNER terminal exclusively for the TUNER is normally in the open collector status on the TUNER side and when the tuner's preset station button, etc. is pressed, the "L" level is maintained for about 10 – 100 msec., resulting in switching the source. When the PLAY button is pressed on the turntable, the SYNCHRO terminal exclusively for the turntable (L-E20B) becomes "H" level of about 5 V.
The SYNCHRO terminal (3.5 mm dia.), connected via the common bus line to other equipment, handles two-way data exchange by the following data transmission method.

Transmitted data



1-word/1-command structure



$b_4 = 0$ Operation CODE
$b_4 = 1$ Station number or tune number code (not used in this model)

5-(3) Signal Code List

1) Code list 1: $b_4 = 0$ (OP = Optional)

(A) DECK

Hexadecimal	Data code				Function	Key input with same meaning
0	0	0	0	0	————	————
1	0	0	0	1	PLAY status set	PLAY
2	0	0	1	0	STOP status set ["STOP (I)" signal]	STOP
6	0	1	1	0	REC PAUSE set after 4-sec. REC MUTE	REC MUTE · PAUSE
9	1	0	0	1	REC PLAY status set	REC · PLAY
E	1	1	1	0	STOP status set only during PLAY	"STOP (II)" signal

(B) TURNTABLE

Hexadecimal	Data code				Function	Key input with same meaning
6	0	1	1	0	Tonearm returns to arm rest and turntable STOP status set	———— (ALL STOP)
7	0	1	1	1	"START"	
9	1	0	0	1	Deck saves recording-discontinued signal	———— (NON REC)
A	1	0	1	0	REC PAUSE status set from conditions other than "deck in recording mode"	———— (REC · PAUSE)

(C) AMPLIFIER

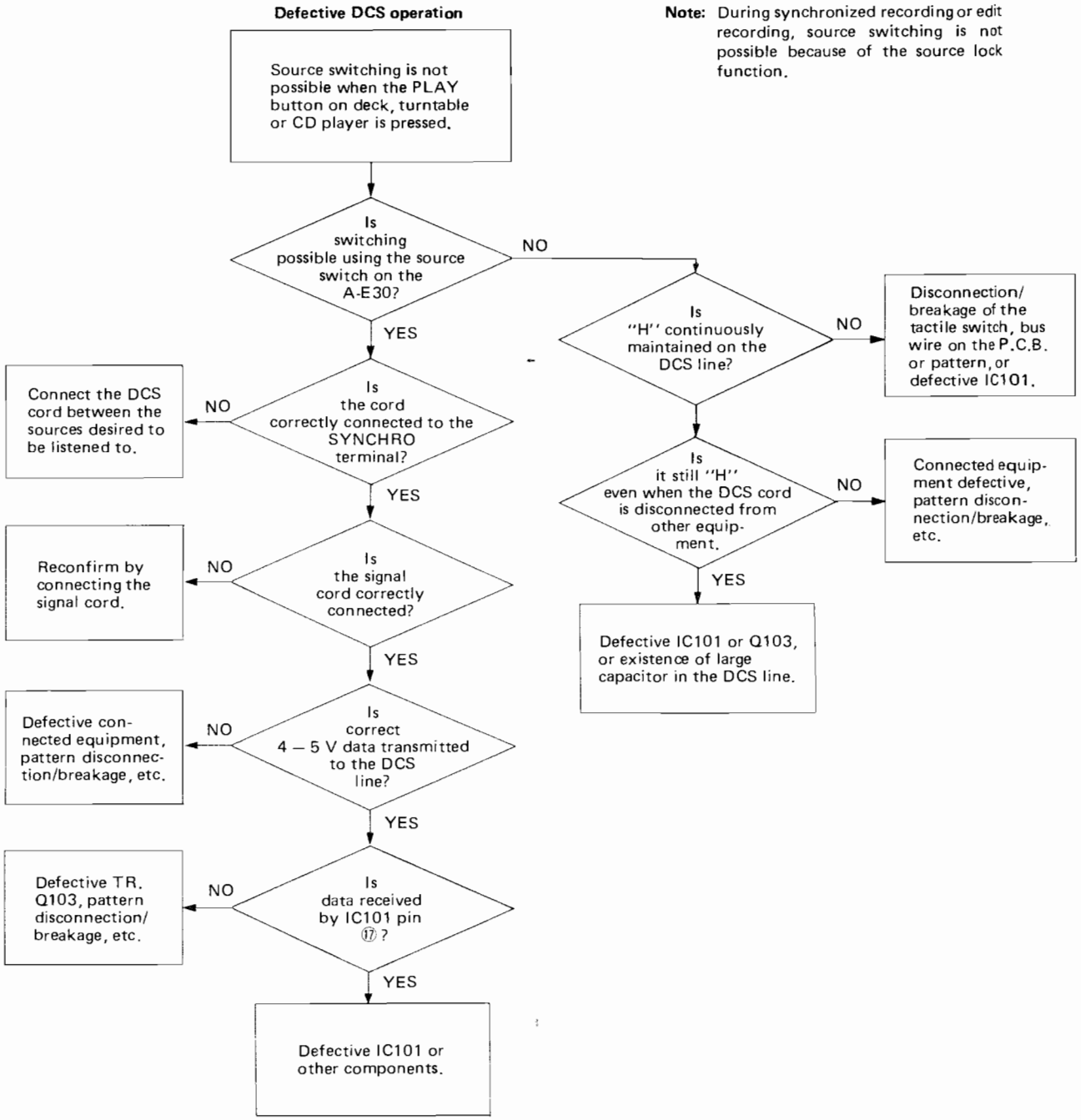
Hexadecimal	Data code				Function	Key input with same meaning
0	0	0	0	0	————	————
1	0	0	0	1	SOURCE switched to PHONO	PHONO
3	0	0	1	1	SOURCE switched to CD/AUX	CD/AUX
4	0	1	0	0	SOURCE switched to TAPE-1	TAPE-1
9	1	0	0	1	———— Edit-recording start signal	————
A	1	0	1	0	SOURCE returned to previous setting [REC (SOURCE)]	———— "REC (SOURCE)"

Code list

	Unit code			
0	0	0	0	————
1	0	0	1	DECK
2	0	1	0	CD PLAYER
4	1	0	0	TURNTABLE
5	1	0	1	AMPLIFIER

As the SYNCHRO terminal uses a common bus line with all equipment as shown in the tables above, the order of connection of equipment poses no problem.
The SYNCHRO TUNER terminal and the SYNCHRO terminal are not connected to GROUND; because of this, DCS does not function when signal codes are not continuously transmitted between the equipment.

5-(4) Troubleshooting


Defective DCS operation
Note: During synchronized recording or edit recording, source switching is not possible because of the source lock function.
Source switching is not possible when the PLAY button on deck, turntable or CD player is pressed.
Is switching possible using the source switch on the A-E30?
NO
YES
Is "H" continuously maintained on the DCS line?
NO
Disconnection/ breakage of the tactile switch, bus wire on the P.C.B. or pattern, or defective IC101.
Is it still "H" even when the DCS cord is disconnected from other equipment.
NO
Connected equipment defective, pattern disconnection/breakage, etc.
YES
Defective IC101 or Q103, or existence of large capacitor in the DCS line.
Is the cord correctly connected to the SYNCHRO terminal?
NO
Connect the DCS cord between the sources desired to be listened to.
YES
Is the signal cord correctly connected?
NO
Reconfirm by connecting the signal cord.
YES
Is correct 4 – 5 V data transmitted to the DCS line?
NO
Defective connected equipment, pattern disconnection/breakage, etc.
YES
Is data received by IC101 pin ⑰ ?
NO
Defective TR. Q103, pattern disconnection/ breakage, etc.
YES
Defective IC101 or other components.

When DCS is defective as shown in the above example, check if signals are output on the DCS data line.

(Simplified check method)

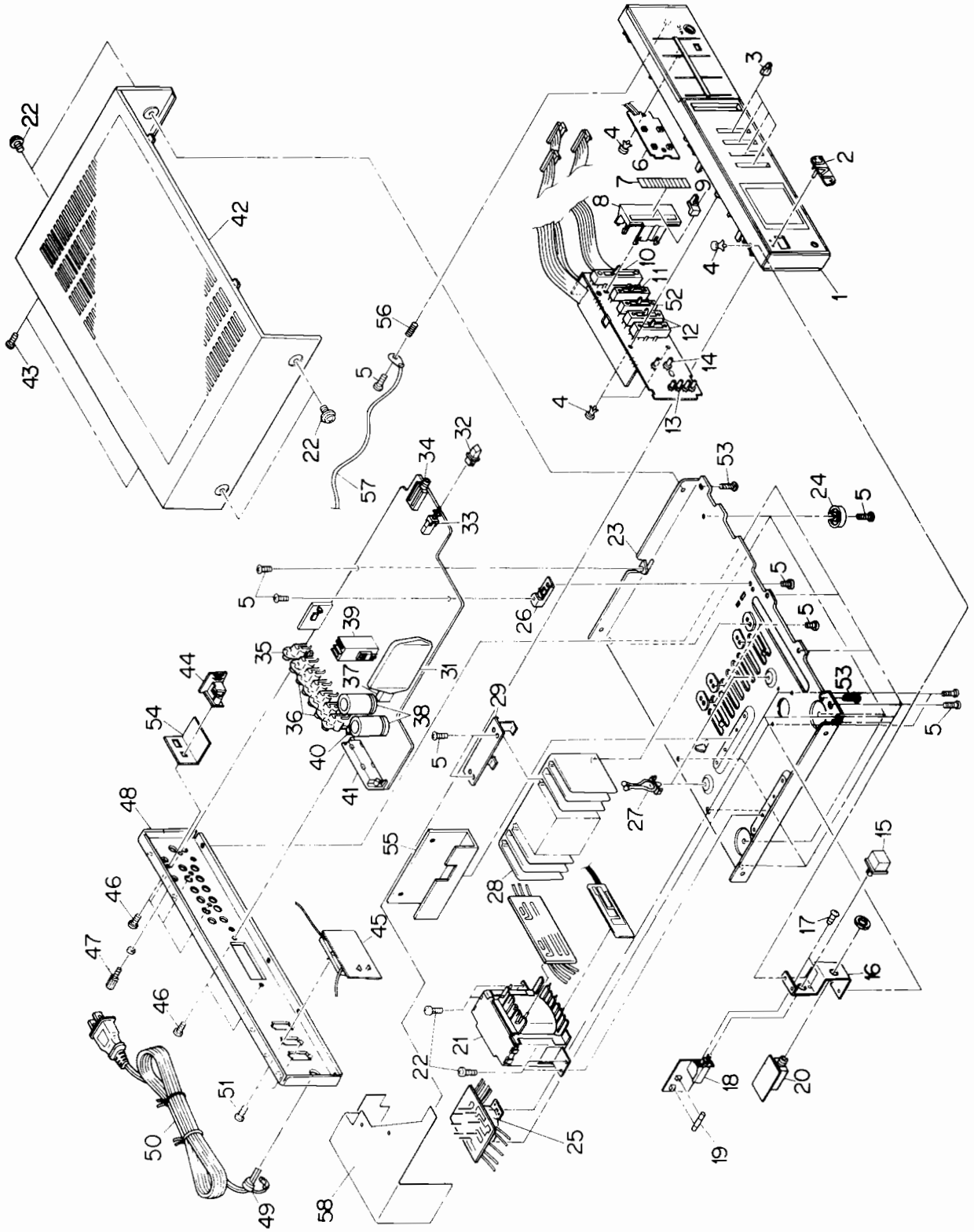
Apply probes of the tester (for voltage measurement) between the SYNCHRO terminal and the ground, and press the button of the equipment to be checked then check if the tester needle moves with a momentary shaking motion.

PARTS LIST

Contents

1. Exploded View and Part Numbers . . . . . 2 - 2
2. Printed Circuit Board Ass'y and Parts List
2-(1) ENH-050□ Amplifier P.C. Board Ass'y . . . . . 2 - 4
2-(2) END-025□ Module P.C. Board Ass'y . . . . . 2 - 7
3. Packing Materials and Part Numbers . . . . . 2 - 8
4. Accessories List . . . . . 2 - 8

1. Exploded View and Part Numbers



⚠	Item	Part Number	Part Name	Q'ty	Description	Areas
	1	EFP-AE30B	Front Panel Ass'y	1		
	2	E70912-001	JVC Mark	1		
	3	E71265-003	Slide Knob	4		
	4	E48729-007	Plastic Rivet	8		
	5	SBSB3008N	Screw	23		

⚠	Item	Part Number	Part Name	Q'ty	Description	Areas
	6	ESP0001-007	Push Switch	4		
	7	E71710-001	Plate	1		
	8	E71708-001	Escutcheon	1		
	9	E71706-001	Volume Knob	1		
	10	QVZ5010-108	Variable Resistor	1	Main	
	11	QVZ5205-004	Variable Resistor	1	Mic	
	12	QVZ5206-003	Variable Resistor	2	Bass, Treble	
	13	SLR-54DC50F	L.E.D.	4	Yellow	
	14	SLR-54VC50F	L.E.D.	2	Red	
	15	E67628-002	Push Knob	1		
	16	E71770-002	Switch Bracket	1		
	17	SBST3006Z	Screw	2		
⚠	18	QSP1106-004	Power Switch	1		Except BS
⚠		QSP1106-004BS	Power Switch	1		BS only
⚠	19	QMF51U1-1R6S	Fuse	1		J, C
⚠		QMF51A2-1R6S	Fuse	1		U, P, PG
⚠		QMF51A2-R80S	Fuse	1		U, P, PG, A, E, G
⚠		QMF51E2-R80SBS	Fuse	1		BS
	20	QMS6312-020	Headphone Jack	1		
⚠	21	ETP1050-06JA	Power Transformer	1		J, C
⚠		ETP1050-06FA	Power Transformer	1		U, P, PG
⚠		ETP1050-06EA	Power Transformer	1		E, A, G
⚠		ETP1050-06EABS	Power Transformer	1		BS
	22	E61660-004	Screw	4		
	23	E24823-001	Chassis Base	1		J, C, E, A, G, BS
		E24823-002	Chassis Base	1		U, P, PG
	24	E47227-021	Foot	4		
⚠	25	QSR0085-007	Voltage Selector	1		U, P, PG
	26	E68867-002	Bracket	1		
	27	QHW2115-001	Wire Clamp	2		
	28	E303532-001	Heat Sink	1		
	29	E71709-001	Leaf Spring	1		
	30	—	—			
	31	STK4141MK2	Power Pack I.C.	1		
	32	VXP4346-001	Push Button	1		
	33	QST2101-E06	Push Switch	1	TAPE-2, MONITOR	
	34	QMS6313-019	Mic Jack	1		
	35	EMN00TV-201A	2P Pin Jack	1	PHONO	
	36	EMN00TV-602A	6P Pin Jack	2	AUX, TAPE-1, 2, TUNER	
	37	ESK5D24-216	Relay	1		
	38	QEZ0061-478	Electrolytic Capacitor	2		
	39	E70945-H40B	Heat Sink	1		
	40	QMS2501-105	Mini Jack	1		
	41	EMB90YV-401A	Speaker Terminal	1		
	42	E24575-003	Metal Cover	1		J, C, U, P, PG
		E24575-005	Metal Cover	1		E, A, G, BS
	43	SHSB3008M	Screw	2		
	44	QMS3501-018	Mini Jack	1	DCS	
⚠	45	QMC0637-004	3P AC Outlet	1		J, U, P, PG
⚠		QMC0638-001	3P AC Outlet	1		C
	46	SBSB3008M	Screw	8		
⚠	47	E70078-001	GND Terminal	1		
	48	E24824-007	Rear Panel	1		J, C
		E24824-006	Rear Panel	1		U, P, PG
		E24824-005	Rear Panel	1		A, BS
		E24824-004	Rear Panel	1		E, G
⚠	49	QHS3876-162	Cord Stopper	1		Except BS
⚠		QHS3876-162BS	Cord Stopper	1		BS only
⚠	50	QMP1200-200	Power Cord	1		J
⚠		QMP1340-200	Power Cord	1		C
⚠		QMP7600-250	Power Cord	1		U, P, PG
⚠		QMP3900-200	Power Cord	1		E, G
⚠		QMP2560-244	Power Cord	1		A
⚠		QMP9017-008BS	Power Cord	1		BS
	51	SDSB3008M	Screw	2		
	52	QVZ5205-001	Variable Resistor	1	Balance	
	53	SBSF3008Z	Screw	2		
	54	E72039-001	Shield Bracket	1		
	55	E69500-004	Sheet	1		
	56	E72103-001	Comp. Spring	1		
	57	EWF102-012	Wire Ass'y	1		
	58	E30381-001	Primary Cover	1		

⚠ : Safety Parts

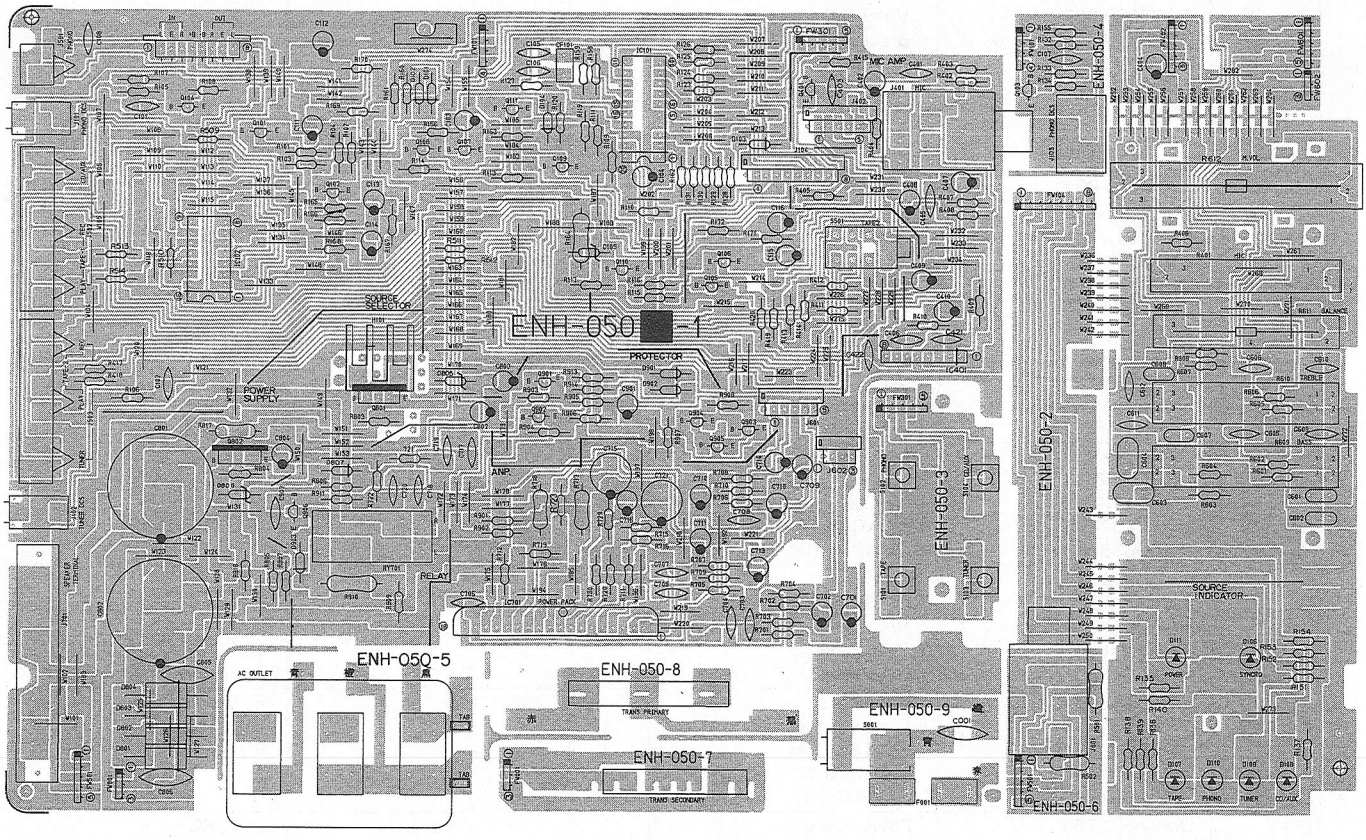
2. Printed Circuit Board Ass'y and Parts List

2-(1) ENH-050□ Amplifier P.C. Board Ass'y

Note: ENH-050□ varies according to the area employed. See note (1) when placing an order.

Note (1)

P.C. Board Ass'y	Designated Areas
ENH-050 [B]	U.S.A. & Canada
ENH-050 [C]	U.S. Military Market & Other Countries
ENH-050 [D]	Europe & Australia
ENH-050 [E]	U.K.
ENH-050 [F]	West Germany



Transistors

⚠	Item No.	Part Number	Description	Maker	Areas
	Q101	2SC1685(Q,R)	Silicon	Matsushita	
	Q102	2SC1685 (Q,R)	Silicon	Matsushita	
	Q103	2SC1685(Q,R)	Silicon	Matsushita	
	Q104	2SC1685(Q,R)	Silicon	Matsushita	
	Q105	2SD655(E,F)	Silicon	Hitachi	
	Q106	2SD655(E,F)	Silicon	Hitachi	
	Q107	2SC1685(Q,R)	Silicon	Matsushita	
	Q108	2SC1685(Q,R)	Silicon	Matsushita	
	Q109	2SA564A(Q,R)	Silicon	Matsushita	
	Q110	2SA564A(Q,R)	Silicon	Matsushita	
	Q111	2SA564A(Q,R)	Silicon	Matsushita	
	Q401	2SC2389(S,E)	Silicon	Rohm	
	Q801	2SD1265A(O,P)	Silicon	Matsushita	
	Q802	2SB941A(P,Q)	Silicon	Matsushita	
	Q901	2SC2389(S,E)	Silicon	Rohm	
	Q902	2SC2389(S,E)	Silicon	Rohm	
	Q903	2SC1685(Q,R)	Silicon	Matsushita	
	Q904	2SC1685(Q,R)	Silicon	Matsushita	
	Q905	2SA564A(Q,R)	Silicon	Matsushita	
	Q906	2SC1815(Y,GR)	Silicon	Toshiba	

ICs

⚠	Item No.	Part Number	Description	Maker	Areas
	IC101	M50761-304P		Ryoyo	
	IC102	TC4052BP		Toshiba	
	IC401	M5218L-R		Ryoyo	
	IC701	STK4141MK2		Sanyo	

Diodes

⚠	Item No.	Part Number	Description	Maker	Areas
	D101	1S2473			
	D102	1S2473			
	D103	1S2473			
	D104	1S2473			
	D105	RD5.1EB2		NEC	
	D106	SLR-54VC50F165		Rohm	
	D107	SLR-54DC50F165		Rohm	
	D108	SLR-54DC50F165		Rohm	
	D109	SLR-54DC50F165		Rohm	
	D110	SLR-54DC50F165		Rohm	
	D111	SLR-54VC50F165		Rohm	
⚠	D801	S3V20F		Shindengen	
⚠	D802	S3V20F		Shindengen	
⚠	D803	S3V20F		Shindengen	
⚠	D804	S3V20F		Shindengen	
	D805	RD10EB3		NEC	
	D806	RD10EB3		NEC	
	D807	1S2473			
	D901	1S2473			
	D902	1S2473			
	D903	1S2473			

Capacitors

⚠	Item No.	Part Number	Description			Areas
	C101	QCF31HP-103	0.01 μF	50 V	Ceramic	
	C102	QCF31HP-103	0.01 μF	50 V	Ceramic	
	C103	QET61EM-106	10 μF	25 V	Electro	
	C104	QET61CM-107	100 μF	16 V	Electro	
	C105	QCY31HK-151	150 pF	50 V	Ceramic	
	C106	QCY31HK-151	150 pF	50 V	Ceramic	
	C107	QCY31HK-221	220 pF	50 V	Ceramic	
	C108	QCF31HP-103	0.01 μF	50 V	Ceramic	
	C111	QET61CM-476	47 μF	16 V	Electro	
	C112	QET61CM-476	47 μF	16 V	Electro	
	C113	QET61EM-107	100 μF	25 V	Electro	
	C114	QET61EM-107	100 μF	25 V	Electro	
	C115	QETB1CM-477	470 μF	16 V	Electro	
	C116	QETC1EM-107	100 μF	25 V	Electro	
	C401	QCY31HK-221	220 pF	50 V	Ceramic	

Capacitors

⚠	Item No.	Part Number	Description			Areas
	C402	QET61EM-106	10 μF	25 V	Electro	
	C403	QCY31HK-101	100 pF	50 V	Ceramic	
	C404	QET61EM-106	10 μF	25 V	Electro	
	C405	QCS31HJ-100	10 pF	50 V	Ceramic	
	C406	QCS31HJ-100	10 pF	50 V	Ceramic	
	C407	QET61EM-106	10 μF	25 V	Electro	
	C408	QET61EM-106	10 μF	25 V	Electro	
	C409	QET61EM-106	10 μF	25 V	Electro	
	C410	QET61EM-106	10 μF	25 V	Electro	
	C421	QCY31HK-101	100 pF	50 V	Ceramic	
	C422	QCY31HK-101	100 pF	50 V	Ceramic	
	C423	QCF21HP-103	0.01 μF	50 V	Ceramic	
	C424	QCF21HP-103	0.01 μF	50 V	Ceramic	
	C425	QCF31HP-473	0.047 μF	50 V	Ceramic	
	C501	QCY21HK-101	100 pF	50 V	Ceramic	F
	C502	QCY21HK-101	100 pF	50 V	Ceramic	F
	C503	QCY21HK-101	100 pF	50 V	Ceramic	F
	C504	QCY21HK-101	100 pF	50 V	Ceramic	F
	C505	QCY21HK-101	100 pF	50 V	Ceramic	F
	C506	QCY21HK-101	100 pF	50 V	Ceramic	F
	C601	QFN31HK-153	0.015 μF	50 V	Mylar	
	C602	QFN31HK-153	0.015 μF	50 V	Mylar	
	C603	QFN31HK-823	0.082 μF	50 V	Mylar	
	C604	QFN31HK-823	0.082 μF	50 V	Mylar	
	C605	QCY31HK-332	3300 pF	50 V	Ceramic	
	C606	QCY31HK-332	3300 pF	50 V	Ceramic	
	C607	QFN31HK-183	0.018 μF	50 V	Mylar	
	C608	QFN31HK-183	0.018 μF	50 V	Mylar	
	C609	QCY31HK-331	330 pF	50 V	Ceramic	
	C610	QCY31HK-331	330 pF	50 V	Ceramic	
	C611	QCY31HK-122	1200 pF	50 V	Ceramic	
	C612	QCY31HK-122	1200 pF	50 V	Ceramic	
	C701	QET61HM-105	1 μF	50 V	Electro	
	C702	QET61HM-105	1 μF	50 V	Electro	
	C703	QCY31HK-121	120 pF	50 V	Ceramic	
	C704	QCY31HK-121	120 pF	50 V	Ceramic	
	C705	QCY31HK-101	100 pF	50 V	Ceramic	
	C706	QCY31HK-101	100 pF	50 V	Ceramic	
	C707	QCS31HJ-120	12 pF	50 V	Ceramic	
	C708	QCS31HJ-120	12 pF	50 V	Ceramic	
	C709	QET61AM-476	47 μF	10 V	Electro	
	C710	QET61AM-476	47 μF	10 V	Electro	
	C711	QET61HM-226	22 μF	50 V	Electro	
	C712	QET61HM-226	22 μF	50 V	Electro	
	C713	QET61HM-475	4.7 μF	50 V	Electro	
	C714	QET61HM-475	4.7 μF	50 V	Electro	
	C715	QEH51HM-107	100 μF	50 V	Electro	
	C716	QET61HM-106	10 μF	50 V	Electro	
	C717	QCF31HP473	0.047 μF	50 V	Ceramic	
	C718	QCF31HP-473	0.047 μF	50 V	Ceramic	
	C719	QCF31HP-473	0.047 μF	50 V	Ceramic	
	C720	QCF31HP-473	0.047 μF	50 V	Ceramic	
	C801	QEZ0061-478	4700 μF		Electro	
	C802	QEZ0061-478	4700 μF		Electro	
	C803	QET61CM-226	22 μF	16 V	Electro	
	C804	QET61CM-226	22 μF	16 V	Electro	
	C805	QCE22HP-103A	0.01 μF	500 V	Ceramic	B
	C805	QCE22HP-103A	0.01 μF	500 V	Ceramic	C
	C805	QCE22HP-103A	0.01 μF	500 V	Ceramic	D
	C805	QCE22HP-103A	0.01 μF	500 V	Ceramic	EBS
	C805	QCE22HP-103A	0.01 μF	500 V	Ceramic	F
	C806	QCE22HP-103A	0.01 μF	500 V	Ceramic	B
	C806	QCE22HP-103A	0.01 μF	500 V	Ceramic	C
	C806	QCE22HP-103A	0.01 μF	500 V		D
	C806	QCE22HP-103A	0.01 μF	500 V		EBS
	C806	QCE22HP-103A	0.01 μF	500 V		F
	C807	QET61HM-225	2.2 μF	50 V	Electro	
	C901	QET61AM-476	47 μF	10 V	Electro	
	C902	QCF31HP-103	0.01 μF	50 V	Ceramic	

⚠ : Safety Parts

Resistors

⚠	Item No.	Part Number	Description			Areas
	R101	QRD141J-223S	22 kΩ	1/4 W	Carbon	
	R102	QRD141J-223S	22 kΩ	1/4 W	Carbon	
	R103	QRD141J-223S	22 kΩ	1/4 W	Carbon	
	R104	QRD141J-223S	22 kΩ	1/4 W	Carbon	
	R105	QRD141J-101S	100 Ω	1/4 W	Carbon	
	R106	QRD141J-101S	100 Ω	1/4 W	Carbon	
	R107	QRD141J-473S	47 kΩ	1/4 W	Carbon	
	R108	QRD141J-473S	47 kΩ	1/4 W	Carbon	
	R109	QRD141J-103S	10 kΩ	1/4 W	Carbon	
	R110	QRD141J-103S	10 kΩ	1/4 W	Carbon	
	R111	QRD141J-222S	2.2 kΩ	1/4 W	Carbon	
	R113	QRD141J-103S	10 kΩ	1/4 W	Carbon	
	R114	QRD141J-103S	10 kΩ	1/4 W	Carbon	
	R115	QRD141J-104S	100 kΩ	1/4 W	Carbon	
	R116	QRD141J-104S	100 kΩ	1/4 W	Carbon	
	R117	QRD141J-473S	47 kΩ	1/4 W	Carbon	
	R119	QRD141J-103S	10 kΩ	1/4 W	Carbon	
	R120	QRD141J-473S	47 kΩ	1/4 W	Carbon	
	R123	QRD141J-103S	10 kΩ	1/4 W	Carbon	
	R124	QRD141J-103S	10 kΩ	1/4 W	Carbon	
	R125	QRD141J-103S	10 kΩ	1/4 W	Carbon	
	R126	QRD141J-103S	10 kΩ	1/4 W	Carbon	
	R127	QRD141J-103S	10 kΩ	1/4 W	Carbon	
	R128	QRD141J-103S	10 kΩ	1/4 W	Carbon	
	R129	QRD141J-103S	10 kΩ	1/4 W	Carbon	
	R130	QRD141J-103S	10 kΩ	1/4 W	Carbon	
	R131	QRD141J-103S	10 kΩ	1/4 W	Carbon	
	R132	QRD141J-101S	100 Ω	1/4 W	Carbon	
	R133	QRD141J-473S	47 kΩ	1/4 W	Carbon	
	R134	QRD141J-473S	47 kΩ	1/4 W	Carbon	
	R135	QRD141J-681S	680 Ω	1/4 W	Carbon	
	R136	QRD141J-331S	330 Ω	1/4 W	Carbon	
	R137	QRD141J-331S	330 Ω	1/4 W	Carbon	
	R138	QRD141J-331S	330 Ω	1/4 W	Carbon	
	R139	QRD141J-331S	330 Ω	1/4 W	Carbon	
	R140	QRD141J-331S	330 Ω	1/4 W	Carbon	
	R151	QRD141J-103S	10 kΩ	1/4 W	Carbon	
	R152	QRD141J-103S	10 kΩ	1/4 W	Carbon	
	R153	QRD141J-103S	10 kΩ	1/4 W	Carbon	
	R154	QRD141J-103S	10 kΩ	1/4 W	Carbon	
	R155	QRD141J-100S	10 Ω	1/4 W	Carbon	
	R156	QRD141J-104S	100 kΩ	1/4 W	Carbon	
	R158	QRD141J-332S	3.3 kΩ	1/4 W	Carbon	
	R159	QRD141J-105S	1 MΩ	1/4 W	Carbon	
	R160	QRD141J-223S	22 kΩ	1/4 W	Carbon	
	R161	QRD141J-223S	22 kΩ	1/4 W	Carbon	
	R162	QRD141J-102S	1 kΩ	1/4 W	Carbon	
	R163	QRD141J-103S	10 kΩ	1/4 W	Carbon	
⚠	R164	QRG022J-151AM	150 Ω	2 W	O.M. Film	
	R165	QRD141J-223S	22 kΩ	1/4 W	Carbon	
	R166	QRD141J-223S	22 kΩ	1/4 W	Carbon	
	R167	QRD141J-221S	220 Ω	1/4 W	Carbon	
	R168	QRD141J-221S	220 Ω	1/4 W	Carbon	
⚠	R169	QRD145J-101S	100 Ω	1/4 W	Carbon	
⚠	R170	QRD145J-101S	100 Ω	1/4 W	Carbon	
	R171	QRD141J-471S	470 Ω	1/4 W	Carbon	
	R172	QRD141J-471S	470 Ω	1/4 W	Carbon	
	R401	QVZ5205-004			Variable	
	R402	QRD141J-102S	1 kΩ	1/4 W	Carbon	
	R403	QRD141J-103S	10 kΩ	1/4 W	Carbon	
	R404	QRD141J-105S	1 MΩ	1/4 W	Carbon	
	R405	QRD141J-103S	10 kΩ	1/4 W	Carbon	
	R406	QRD141J-222S	2.2 kΩ	1/4 W	Carbon	
	R407	QRD141J-222S	2.2 kΩ	1/4 W	Carbon	
	R408	QRD141J-222S	2.2 kΩ	1/4 W	Carbon	
	R409	QRD141J-104S	100 kΩ	1/4 W	Carbon	
	R410	QRD141J-104S	100 kΩ	1/4 W	Carbon	
	R411	QRD141J-104S	100 kΩ	1/4 W	Carbon	
	R412	QRD141J-104S	100 kΩ	1/4 W	Carbon	
	R413	QRD141J-104S	100 kΩ	1/4 W	Carbon	

⚠ : Safety Parts

Resistors

⚠	Item No.	Part Number	Description			Areas
	R414	QRD141J-104S	100 kΩ	1/4 W	Carbon	
	R415	QRD141J-221S	220 Ω	1/4 W	Carbon	
	R417	QRD141J-823S	82 kΩ	1/4 W	Carbon	
	R418	QRD141J-823S	82 kΩ	1/4 W	Carbon	
	R419	QRD141J-472S	4.7 kΩ	1/4 W	Carbon	
	R420	QRD141J-472S	4.7 kΩ	1/4 W	Carbon	
⚠	R501	QRG012J-331A	330 Ω	1 W	O.M. Film	
⚠	R502	QRG012J-331A	330 Ω	1 W	O.M. Film	
	R509	QRD141J-333S	33 kΩ	1/4 W	Carbon	
	R510	QRD141J-333S	33 kΩ	1/4 W	Carbon	
	R511	QRD141J-103S	10 kΩ	1/4 W	Carbon	
	R512	QRD141J-103S	10 kΩ	1/4 W	Carbon	
	R513	QRD141J-123S	12 kΩ	1/4 W	Carbon	
	R514	QRD141J-123S	12 kΩ	1/4 W	Carbon	
	R601	QRD141J-223S	22 kΩ	1/4 W	Carbon	
	R602	QRD141J-223S	22 kΩ	1/4 W	Carbon	
	R603	QRD141J-332S	3.3 kΩ	1/4 W	Carbon	
	R604	QRD141J-332S	3.3 kΩ	1/4 W	Carbon	
	R605	QRD141J-472S	4.7 kΩ	1/4 W	Carbon	
	R606	QRD141J-472S	4.7 kΩ	1/4 W	Carbon	
	R607	QRD141J-821S	820 Ω	1/4 W	Carbon	
	R608	QRD141J-821S	820 Ω	1/4 W	Carbon	
	R609	QVZ5206-003			Variable	
	R610	QVZ5206-003			Variable	
	R611	QVZ5205-001			Variable	
	R612	QVZ5010-108			Variable	
	R701	QRD141J-102S	1 kΩ	1/4 W	Carbon	
	R702	QRD141J-102S	1 kΩ	1/4 W	Carbon	
	R703	QRD141J-913S	91 kΩ	1/4 W	Carbon	
	R704	QRD141J-913S	91 kΩ	1/4 W	Carbon	
	R705	QRD141J-681S	680 Ω	1/4 W	Carbon	
	R706	QRD141J-681S	680 Ω	1/4 W	Carbon	
	R707	QRD141J-823S	82 kΩ	1/4 W	Carbon	
	R708	QRD141J-823S	82 kΩ	1/4 W	Carbon	
	R709	QRD141J-103S	10 kΩ	1/4 W	Carbon	
	R710	QRD141J-103S	10 kΩ	1/4 W	Carbon	
	R711	QRD141J-222S	2.2 kΩ	1/4 W	Carbon	
	R712	QRD141J-222S	2.2 kΩ	1/4 W	Carbon	
	R715	QRD141J-222S	2.2 kΩ	1/4 W	Carbon	
	R716	QRD141J-222S	2.2 kΩ	1/4 W	Carbon	
⚠	R717	QRX012J-R22A	0.22 Ω	1 W	O.M. Film	
⚠	R718	QRX012J-R22A	0.22 Ω	1 W	O.M. Film	
⚠	R719	QRD145J-101S	100 Ω	1/4 W	UNF. Carbon	
⚠	R720	QRD145J-101S	100 Ω	1/4 W	UNF. Carbon	
⚠	R721	QRD145J-100S	10 Ω	1/4 W	UNF. Carbon	
⚠	R722	QRD145J-100S	10 Ω	1/4 W	UNF. Carbon	
⚠	R723	QRZ0061-4R7	4.7 Ω	1/4 W	Fusible	
	R729	QRD141J-272S	2.7 kΩ	1/4 W	Carbon	
	R730	QRD141J-102S	1 kΩ	1/4 W	Carbon	
	R803	QRD141J-682S	6.8 kΩ	1/4 W	Carbon	
	R804	QRD141J-682S	6.8 kΩ	1/4 W	Carbon	
	R805	QRD141J-103S	10 kΩ	1/4 W	Carbon	
	R806	QRD141J-103S	10 kΩ	1/4 W	Carbon	
	R807	QRD141J-223S	22 kΩ	1/4 W	Carbon	
⚠	R817	QRZ0062-390	39 Ω	1/4 W	Fusible	
⚠	R818	QRD145J-102S	1 kΩ	1/4 W	UNF. Carbon	
	R901	QRD141J-332S	3.3 kΩ	1/4 W	Carbon	
	R902	QRD141J-332S	3.3 kΩ	1/4 W	Carbon	
	R903	QRD141J-392S	3.9 kΩ	1/4 W	Carbon	
	R904	QRD141J-392S	3.9 kΩ	1/4 W	Carbon	
	R905	QRD141J-104S	100 kΩ	1/4 W	Carbon	
	R906	QRD141J-104S	100 kΩ	1/4 W	Carbon	
	R907	QRD141J-683S	68 kΩ	1/4 W	Carbon	
	R908	QRD141J-334S	330 kΩ	1/4 W	Carbon	
⚠	R909	QRD145J-101S	100 Ω	1/4 W	UNF. Carbon	
⚠	R910	QRG022J-391A	390 Ω	2 W	O.M. Film	
	R911	QRD141J-103S	10 kΩ	1/4 W	Carbon	
	R913	QRD141J-562S	5.6 kΩ	1/4 W	Carbon	
	R914	QRD141J-562S	5.6 kΩ	1/4 W	Carbon	

Others

⚠	Item No.	Part Number	Description	Areas
		A41096	Tab	
		E11055-102	Circuit Board	B
		E11055-202	Circuit Board	C
		E11055-202	Circuit Board	D
		E11055-202BS	Circuit Board	EBS
		E11055-202	Circuit Board	F
		SBSB3008Z	Tapping Screw	
	H101	E70945-H40B	Heat Sink	
	J101	QMS2501-105	Mini Jack	
	J102	QMS2501-105	Mini Jack	
	J103	QMS3501-018	Jack Ass'y	
	J501	EMN00TV-201A	2P Pin Jack	
	J502	EMN00TV-602A	Pin Jack Ass'y	
	J602	E04365-003	3P Socket	
	J701	EMB90YV-401A	Speaker Terminal	

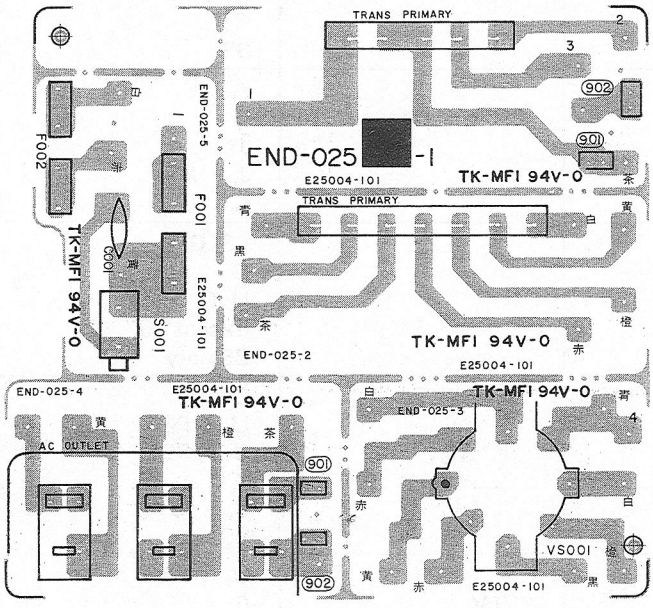
Others

⚠	Item No.	Part Number	Description	Areas
	J801	QMS6312-020	Headphone Jack	
	S101	ESP0001-007	Push Switch	
	S102	ESP0001-007	Push Switch	
	S103	ESP0001-007	Push Switch	
	S104	ESP0001-007	Push Switch	
	CF101	ECX0000-400KS	C. Resonator	
	J104	E04365-008	8P Connector	
	J401	QMS6313-019	MIC. Jack	
	J402	E04365-005	F.W. Socket	
	J503	EMN00TV-602A	Pin Jack Ass'y	
	J601	E04365-005	F. W. Socket	
	RY701	ESK5D24-216	Relay	
	S501	QST2101-E06	Push Switch	

⚠ : Safety Parts

2-(2) END-025□ Module P.C. Board Ass'y

P.C. Board Ass'y	Designated Areas
END-025 [B]	U.S.A.
END-025 [C]	U.S. Military Market & Other Countries
END-025 [D]	Europe & West Germany
END-025 [EBS]	U.K.
END-025 [F]	Australia
END-025 [G]	Canada



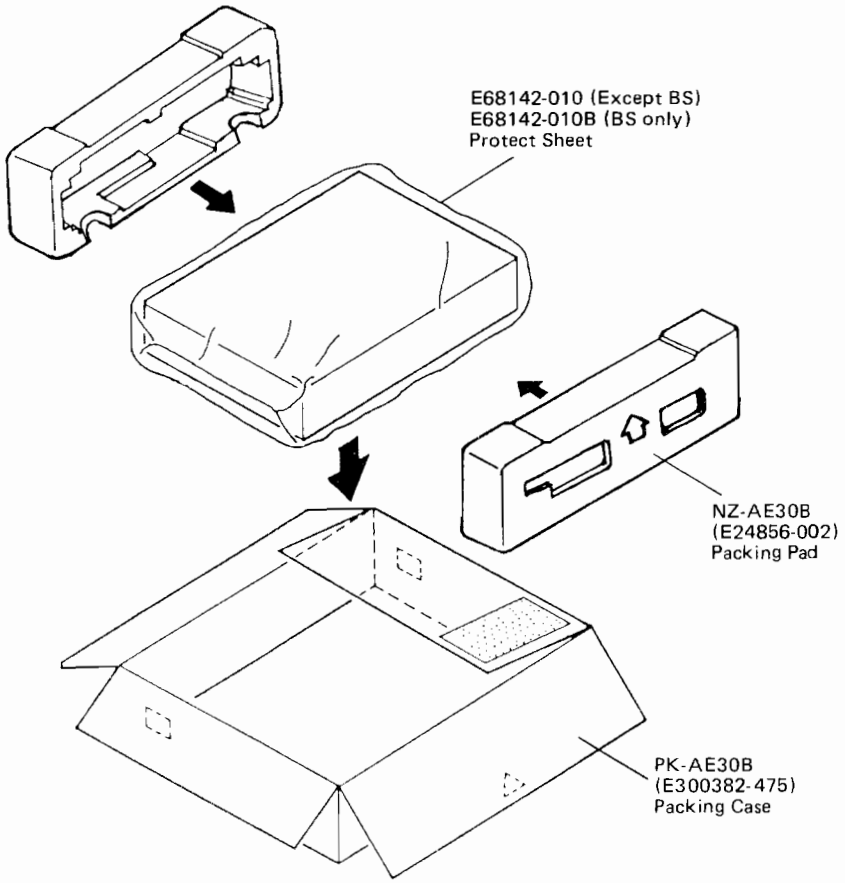
⚠	Item No.	Part Number	Description	Areas
		E25004-102	Circuit Board	B
		E25004-102	Circuit Board	C
		E25004-102	Circuit Board	D
		E25004-102	Circuit Board	F
		E25004-102	Circuit Board	G
		E25004-102BS	Circuit Board	EBS
⚠	S001	QSP1106-004	Power Switch	B
⚠	S001	QSP1106-004	Power Switch	C
⚠	S001	QSP1106-004	Power Switch	D
⚠	S001	QSP1106-004	Power Switch	F
⚠	S001	QSP1106-004	Power Switch	G
⚠	S001	QSP1106-004BS	Power Switch	EBS
⚠	C001	QCZ9019-472	Ceramic Capacitor	B
⚠	C001	QCZ9019-472	Ceramic Capacitor	C
⚠	C001	QCZ9019-472	Ceramic Capacitor	D
⚠	C001	QCZ9019-472	Ceramic Capacitor	F
⚠	C001	QCZ9019-472	Ceramic Capacitor	G
⚠	C001	QCZ9019-472BS	Ceramic Capacitor	EBS
		EMG7331-001	Fuse Clip	
⚠		QMC0637-004	AC Outlet	B
⚠		QMC0637-004	AC Outlet	C
⚠		QMC0638-001	AC Outlet	G
		E65508-002	Tab	
⚠		QSR0085-007	Voltage Selector	C

⚠ : Safety Parts

3. Packing Materials and Part Numbers

The Marks for Designated Areas

J . . . . . U.S.A.
C . . . . . Canada
E . . . . . Europe
A . . . . . Australia
G . . . . . West Germany
BS . . . . . U.K.
P, PG . . . . . U.S. Military Market
U . . . . . Other Countries

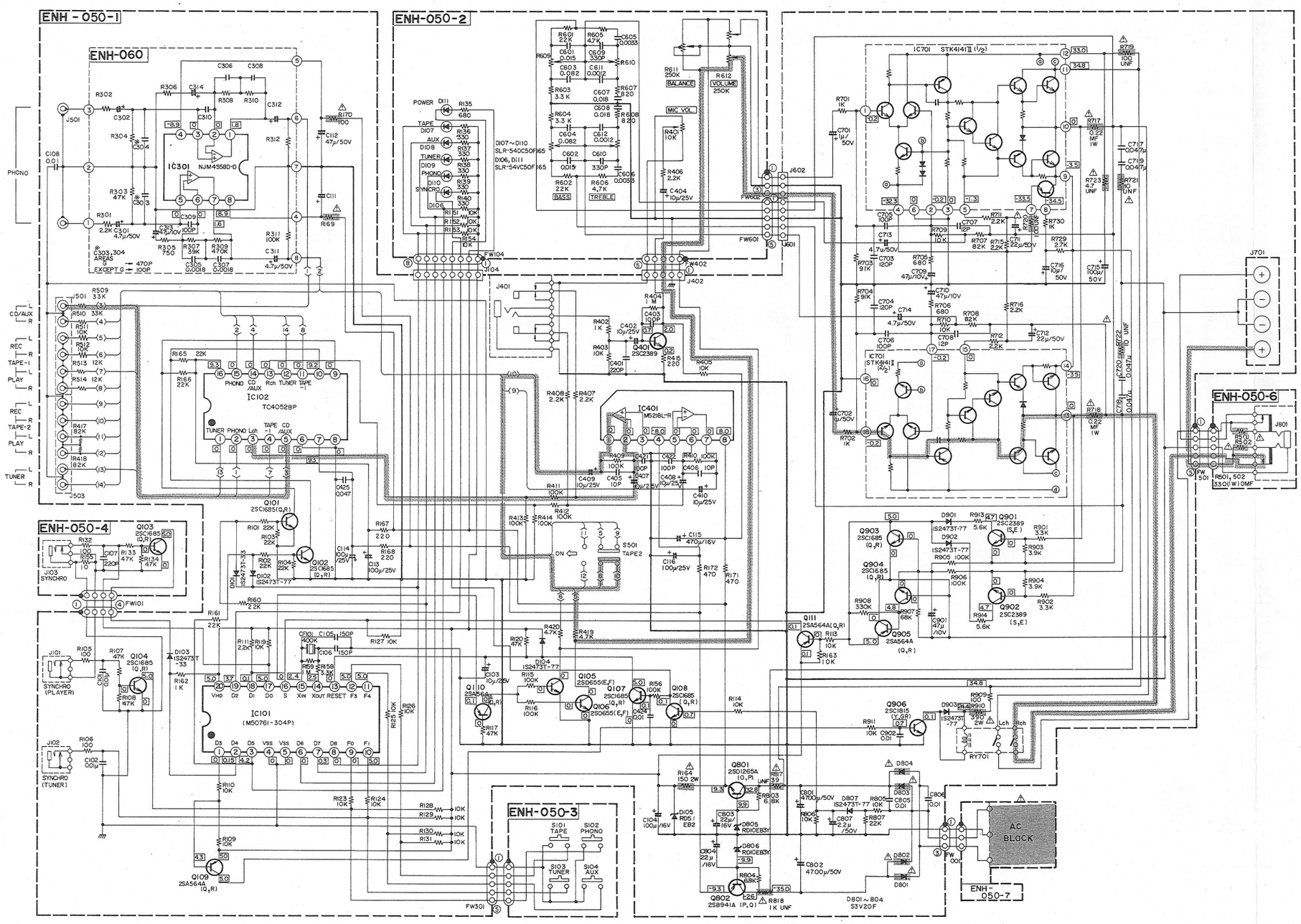


4. Accessories List

⚠	Part Number	Part Name	Description	Areas
	E30580-1212A	Instruction Book		Except BS
	E30580-1212ABS	Instruction Book		BS only
	BT20048B	Warranty Card		J, P, PG
	BT20025H	Warranty Card		C
	BT20060	Warranty Card		BS
	BT20029C	Warranty Card		A
	BT20064	Warranty Card		G
	BT20046B	Service Information Card		J
	BT20044D	Safety Instruction Sheet		J, P, PG
	BT20071A	Service Center List		C
	BT20066	EEC Agency		BS, G
	BT20054-006A	FTZ Information		G
⚠	E04056	Siemens Plug		U, G
	E300196-033	Envelope		Except BS
	E300196-033B	Envelope		BS only
	E69177-004	FTZ Label		G
⚠	QMF51A2-1R6S	Fuse		U, P, PG
⚠	QMF51A2-R805	Fuse		U, P, PG
⚠	QMF51U1-1R6S	Fuse		J, C
⚠	QMF51A2-R80S	Fuse		E, A, G
⚠	QMF51E2-R80SBS	Fuse		BS
	E6581-4	Envelope		U, P, PG
	E35497-017	Caution Sheet	110 V	P
	E35497-019	Caution Sheet	220 V	U, PG

⚠ : Safety Parts

6. A-E30B Schematic Diagram

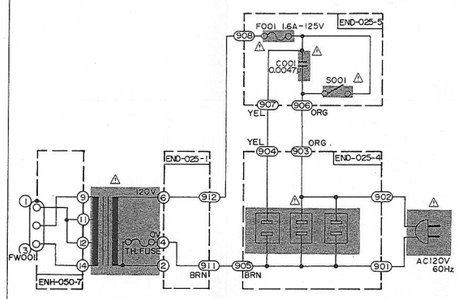


Notes:

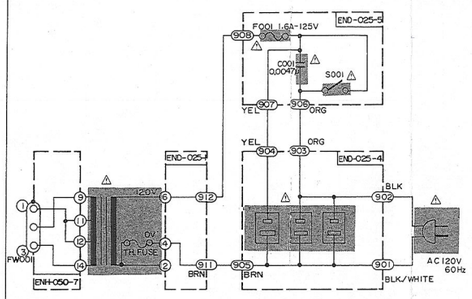
1. ▭ indicates signal path.
2. When replacing the parts in the darkned area (▭) and those marked with ⚠ , be sure to use the designated parts to ensure safety.
3. This is the standard circuit diagram. The design and contents are subject to change without notice.

(No. 2789)

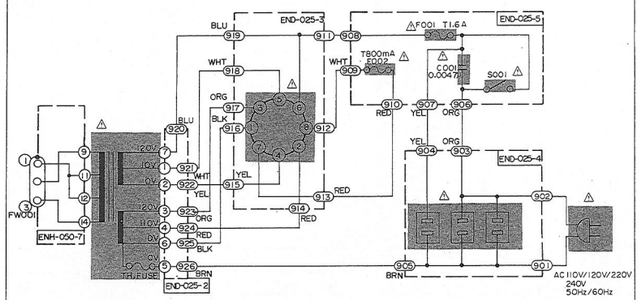
(J) FOR U.S.A. AC 120V 60Hz



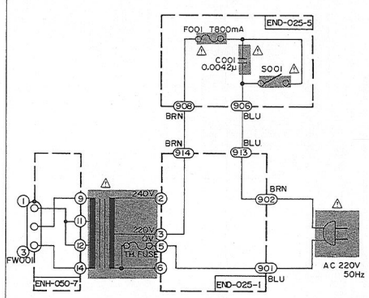
(C) FOR CANADA AC 120V 60Hz



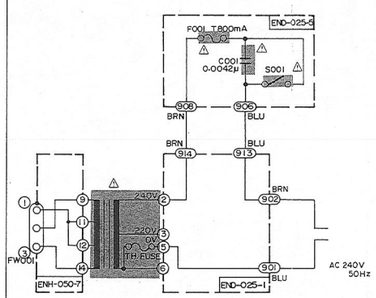
(U) FOR OTHER CONTRIES
(P) FOR U S MILITARY
AC 110V/120V/220V/240V 50/60Hz



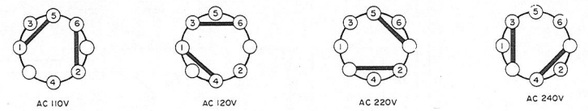
(E) FOR CONTINENTAL EUROPE
(G) WEST GERMANY
AC 220V~50Hz



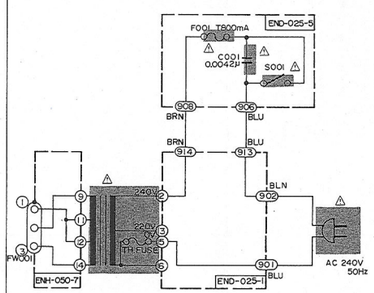
(BS) FOR U.K. AC 240V~50Hz



VOLTAGE SELECTOR INTERNAL CONNECTION



(A) FOR AUSTRALIA AC 240V~50Hz



A-E30B

JVC

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